

*Ser. No. 10/040,952 Amendment, GAU 2859
Response to Office Action dated November 18, 2003*

IN THE CLAIMS

1. (currently amended): A light sensor for detecting entry of an object into a space, the light sensor comprising:

a light emitter and a light guide both located on a first side of said space;

a light receiver, located on a second side of said space, for receiving light emitted from said light guide;

said light guide taking in the light emitted from the light emitter, reflecting the taken-in light at a reflection portion comprised in the light guide, and ejecting the light across the space toward the light receiver,

wherein the light guide is plate-shaped and comprises the reflection portion disposed on one of two opposing faces of the light guide having larger areas than the other faces thereof, and the light guide takes in the light through one end face thereof, wherein the end face is one of the other faces, reflects the taken-in light at the reflection portion, and ejects the reflected light from the other of the two opposing faces thereof;

whereby entry of the object into said space is detected based on the light received by the light receiver.

2. (canceled):

3. (original): The light sensor according to Claim 1, wherein the reflection portion comprises a series of parallel grooves.

4. (currently amended): A light sensor for detecting a position of a reflective object in a space, the light sensor comprising:

a light emitter and a light guide both located on a first side of said space;

a light receiver, located on the first side of said space, for receiving light emitted from said light guide and reflected by the reflective object; and

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said light guide taking in the light emitted from the light emitter, reflecting the taken-in light at a reflection portion comprised in the light guide, and ejecting the light across the space toward the reflective object;

wherein the light guide is plate-shaped and comprises the reflection portion disposed on one of two opposing faces of the light guide having larger areas than the other faces thereof, and the light guide takes in the light through one end face thereof, wherein the end face is one of the other faces, reflects the taken-in light at the reflection portion, and ejects the reflected light from the other of the two opposing faces thereof, [[.]]

whereby the position of said reflective object is detected based on the light received by the light receiver.

5. (canceled)

6.(original): The light sensor according to Claim 4, wherein the reflection portion comprises a series of parallel grooves.

7. (currently amended): A light sensor for detecting entry of an object into a space, the light sensor comprising:

a light emitter located on a first side of said space;

a light receiver, located on the second side of said space, for receiving light emitted from said light emitter; and

a light guide located on the second side of said space;

said light guide taking in the light emitted from the light emitter, reflecting the taken-in light at a reflection portion comprised in the light guide, and ejecting the light toward the light receiver,

wherein the light guide is plate-shaped and comprises the reflection portion disposed on one of two opposing faces of the light guide having larger areas than the other faces thereof, and

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the light guide takes in the light through ~~one end face thereof~~; another one of the two opposing faces of the light guide having larger areas than the other faces thereof, reflects the taken-in light at the reflection portion, and ejects the reflected light from one end face thereof, wherein the end face is one of the other faces, ~~the other of the two opposing faces thereof~~.

whereby entry of the object into said space is detected based on the light received by the light receiver.

8. (canceled)

9. (original): The light sensor according to Claim 7, wherein the reflection portion comprises a series of parallel grooves.

10. (withdrawn): A light sensor comprising:

a light emitter;

a light receiver for receiving light emitted from said light emitter;

a first light guide for taking in the light emitted from the light emitter, reflecting the taken-in light at a first reflection portion provided on a part thereof, and ejecting the light; and

a second light guide for taking in the light ejected from said first guiding body, reflecting the taken-in light at a second reflection portion provided on a part thereof, and ejecting the light toward the light receiver,

wherein the first light guide and the second light guide are disposed so as to be opposed to each other with an appropriate space in between, and entry of an object into said space is detected based on the light received by the light receiver.

11. (withdrawn): A light sensor according to Claim 10, wherein the first light guide in a plate shape, which has the first reflection portion disposed on one plane thereof, takes in the light through one end face thereof, reflects the taken-in light at the reflection portion, and ejects the reflected light from the other plane thereof.

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12. (withdrawn): A light sensor according to Claim 11, wherein the first reflection portion has a groove shape.

13. (withdrawn): A light sensor according to Claim 12, wherein the second light guide in a plate shape, which has the second reflection portion disposed on one plane thereof, takes in the light through one end face thereof, reflects the taken-in light at the reflection portion, and ejects the reflected light from the other plane thereof.

14. (withdrawn): A light sensor according to Claim 13, wherein the second reflection portion has a groove shape.

15. (withdrawn): A light sensor according to Claim 10, wherein the second light guide in a plate shape, which has the second reflection portion disposed on one plane thereof, takes in the light through one end face thereof, reflects the taken-in light at the reflection portion, and ejects the reflected light from the other plane thereof.

16. (withdrawn): A light sensor according to Claim 15, wherein the second reflection portion has a groove shape.

17. (currently amended): The light sensor according to claim 1, wherein an intensity of light ejected from a face of the light guide is substantially uniform over an entire area of the ~~light ejecting face~~: face from which the light is ejected.

18. (currently amended): The light sensor according to claim 4, wherein an intensity of light ejected from a face of the light guide is substantially uniform over an entire area of the ~~light ejecting face~~: face from which the light is ejected.

19. (currently amended): The light sensor according to claim 7, wherein an intensity of light ejected from a face of the light guide is substantially uniform over an entire area of the ~~light ejecting face~~: face from which the light is ejected.

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20. (previously presented): The light sensor according to claim 1, wherein the two opposing faces of the light guide having larger areas than the other faces are parallel.

21. (previously presented): The light sensor according to claim 4, wherein the two opposing faces of the light guide having larger areas than the other faces are parallel.

22. (previously presented): The light sensor according to claim 7, wherein the two opposing faces of the light guide having larger areas than the other faces are parallel.

In view of the aforementioned amendments and accompanying remarks, the claims are believed to be in condition for allowance. Withdrawal of the rejection and allowance of all claims is requested.

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (703) 872-9327) on February 27, 2004.

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Signature *Nick Bromer*